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**The role of satellite accounting within the national accounts**

# Tourism Satellite Account in Hungarian Central Statistical Office

**Prepared by Hungarian Central Statistical Office**[1]

*Summary*

Tourism satellite accounts can be used to measure the overall economic performance of tourism. Using the national accounts methodology and framework, they present on the demand side the trips and spending and on the supply side - the production of tourism services, in order to show how much is the sector's contribution to the economy and the amount of employment in tourism. The paper provides the background of the results that are summarized in the Hungarian tourism satellite accounts publications. The structure of the tables and the methodology follow the recommendation of international organizations, the UN World Tourism Organization (UNWTO), United Nations Statistical Division (UNSD), Economic Organization for Cooperation and Development (OECD) and the Statistical Office of the European Union (Eurostat), so that data can be compared to other countries both from the point of view of content and structure.

[1] Prepared by Timea Toth.

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# I. Introduction

1. Tourism is a key and rising sector in Hungary. Tourism is not only a source of income, but also a vibrant sector that has many activities such as accommodation, catering, transportation, cultural or leisure activities.

2. This is not a classic division in the nomenclature of the International Standard Industrial Classification of All Economic Activities (ISIC) and the Statistical Classification of economic activities in the European Community (NACE). The tourism products and services are heterogeneous, and therefore they requires specific statistical methods. Tourism Satellite Accounts (TSA) can integrate various data sources to illustrate intersectoral relations. TSA provide for full analysis of tourism sector including national income-product and input-output accounts by focusing on tourism related items (consumption, direct investment, added value, imports exports).

3. The structure of the tables are recommended by international organizations – UN World Tourism Organization (UNWTO), United Nations Statistical Division (UNSD), Economic Organization for Cooperation and Development (OECD) and the Statistical Office of the European Union (Eurostat) –, so it can be compared to other countries as well as both from the point of view of content and table construction.

4. Hungarian TSA is developed by the Hungarian Central Statistical Office (HCSO) starting from 2004. Interested stakeholders (major international organizations, government organizations, tourism stakeholders) are involved into development. The responsible unit is the Tourism and transport statistics section with the cooperation of national accounts unit and the labour force unit. At the beginning it is supported by the National Economic Ministry, recently by the Hungarian Tourism Agency.

5. In 2008, several methodological changes were done in the calculation of the tables. On the one hand, NACE Rev.1.1 nomenclature was replaced by the Nace Rev.2, so the content of classes – because of reclassifications, aggregations or mergers – have changed. On the other hand, the methodology became more sophisticated in the new recommendations Tourism Satellite Account: Recommended Methodological Framework, 2008 (TSA:RMF 2008), which were developed by the institutions mentioned in paragraph 3. The new methodology takes into account the changes in classifications and the novelties that the Member States have indicated since the introduction of the first satellite accounts.

6. Eurostat published summary data in 2017 on this subject including the latest available data by the Member States (for the years of 2011-2014).

# II. Interpretation and methodological definitions of tourism satellite accounts

7. Our methodology is based on the internationally recommended guidelines RMF 2008, the International Recommendations for Tourism Statistics 2008 (IRTS 2008 UN), OECD and Eurostat common manuals. We follow the recommendations, and we also take into account the national specificities. According to the current principles, the following activities involved in the tourism sector: accommodation, catering, rail, road, water and air passenger transport, passenger cars, rental, travel agencies, tour operators and other booking activities, cultural services, as well as sports and leisure activities. Related to tourism sectors even with spa services or auxiliary transport activities.

8. The tables correspond to the international recommendations, and almost the full series of the tables (10) are compiled in our TSA. However, Table 9 "Tourism collective consumption by products and levels of government" cannot be produced due to the absence

of suitable data sources. That is why in the table series "Gross fixed capital formation" (Table 8) is followed by the "Non-Financial Markets" (Table 10).

9. Content of Hungarian TSA

1) Inbound tourism demand: tourism expenditure by Hungarian residents in Hungary
2) Domestic tourism demand: non-resident tourists' expenditures in Hungary
3) Outbound tourism expenditure: resident tourist expenditures in abroad
4) Internal tourism consumption: Domestic + Inbound tourism demand
5-6.) Total domestic supply and internal tourism consumption
7) Employment in the tourism industries
8) Tourism gross fixed capital formation of tourism industries
10) Non-monetary indicators

10. Tourism indicators (tourism share in gross national product, budget revenues generated by tourism, job creation impact of tourism) are integrated into the system of national accounts and macroeconomic indices. The satellite term refers to this connection. This coherency ensures the internal consistency of tourism statistics, which makes the calculation of indices on the short and long term productivity of tourism possible.

11. TSA is a complex demand-supply statistical system and an economic model. Various data sources (primary statistical surveys, secondary data based on previous data collections, calculations, estimations) must be integrated into TSA with special regard to consistency, credibility and comparability.

12. Data provision homogeneity is ensured by standard terms, classifications, calculation methods as well as by the integration of TSA into the system of national accounts. These factors guarantee the spatial and chronological comparability of TSA data.

13. In terms of international standards, the European System of Accounts 2010 (ESA 2010), the economic nomenclatures and classifications (ISIC and NACE) and the related Hungarian activity classification (TEAOR) do not regard tourism as a separate sector. The mentioned international manuals provide concrete recommendations on tourism related sectors. (See Annex 1.)

## III. Data sources

14. The major groups of applied data sources are the following:

(a) Data collections and analyses on national economy:

- Production and consumption data from national accounts, data on incomes
- Basic data and indices from the balance sheet on sectoral relations
- Data on employment from labour statistics
- Tourism items in the balance of payments of the National Bank of Hungary.

15. The national accounts data are the starting point. Aggregated TSA indices are based on it.

(b) Traditional tourism data collection:

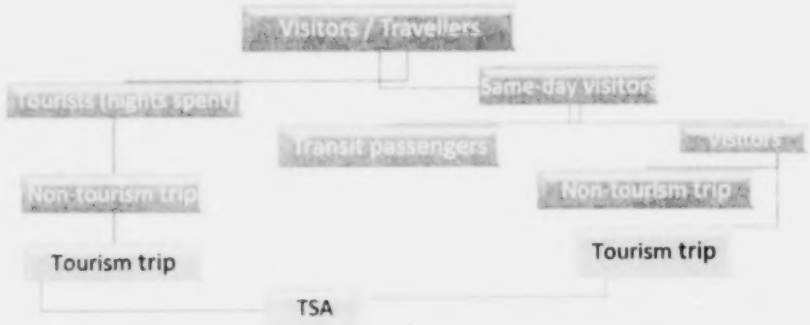
- Border crossing data of persons and vehicles
- Statistical data on commercial accommodations
- Statistical data on private accommodation establishments
- Statistical data on travel agencies and tour operators

16. These supply side statistics represent the starting point to justify the reliability of estimated values integrated into the model.

(c) Representative tourism surveys on demand side (population surveys)

- Incoming international travellers
- Outbound trips of residents in Hungary
- Domestic travels of Hungarian citizens

Figure 1
**Tourism visitors' classes**




17. These surveys are essential to develop TSA systems since they make possible estimates by visitor groups (visitor numbers, spending, purpose of trip and travellers' flows).

18. However, methodological differences make the integration of different data sources difficult, therefore, the different surveys had to be revised. The identified differences were mainly generated by the lack of standard terminology (coverage).

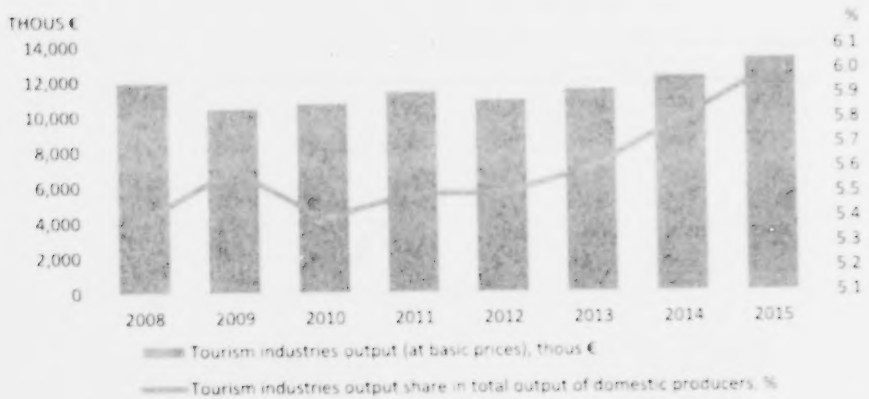
## IV. Statistical Results

19. One of the goals of tourism satellite accounts is to calculate the key macroeconomic indicators of tourism sector. The output and value added can be used to determine the size of the tourism sector and its direct economic contribution to the national economy. Tables 5 (Production accounts of tourism industries) and table 6 (Total domestic supply and internal tourism consumption) of TSA follows the structure of the sectoral supply and use matrix used for national accounts.

20. In 2015, tourism-related sectors output accounted for 13.3 million euro, 8.5% more than in 2014. In 2015, the share of tourism-specific sectors within the national gross domestic product was 6.0.

21. Some of the main indicators from Total domestic supply and internal tourism consumption (at purchasers' prices) from table 6 are provided in figure 1.

Figure 1
**Tourism industries indicators in Hungary**




# V. Methodology and terms

## A. Tourism demand

22. It includes three types as followings:

- Domestic – Table 2a
- Inbound – Table 1
- Internal (Domestic + Inbound) – Table 4

23. There are three other segments:

- Outbound – Table 3
- National – Table 2a + Table 3
- International - Table 3 + Table 2b

## B. Data on tourism investment

24. Table 8 (Tourism gross fixed capital formation) is produced based on data from investment surveys. The sector distribution was also followed in this case. Unreported work was not represented in this survey. Employment data covers tourism related sectors on NACE Rev.2 three-digit level. Data provision is ensured through estimations using national accounts and investment data (in sector distribution).

## C. Gross Revenue

25. Data on revenues (size, distribution) generated by core and complementary functions were required to compile tables 5 and 6. Institutional capacity and revenue reports (integrated statistical reports) provided primary data for the required estimates. These provide data on core and complementary functions (e.g. separate data provision on accommodation and catering in case of accommodation establishments).

## D. Tourism consumption

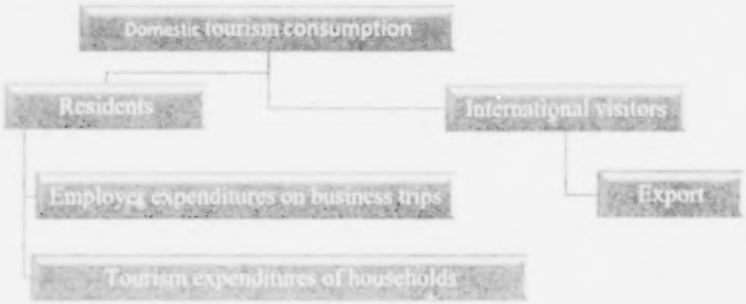
26. It can be determined from the demand side as an individual, household specific activity. All direct and indirect (e.g. complementary services, shopping) travel expenditures are included in visitor consumption. TSA regards domestic and international travellers as household members outside their usual environment.

27. Visitor consumption includes the following items:

- All expenditures made before the travel (e.g. tent, ski equipment, souvenirs etc.).
- All products, consumer goods and services purchased during travel.

28. In case of consumer durables purchased during travel and sold later tourist consumption will be calculated by the margin between purchase and selling prices.

Figure 2
**Domestic tourism consumption**




## E. Intermediate Consumption

29. Data on intermediate consumption is presented in tables 5 and 6. These register intermediate products used by tourist services. Input-output model makes possible the determination of product utilization ratios.

## F. Accounting of amounts paid to tour operators

30. The survey provides separate data on organized trips (in an integrated manner taking into account specific features). Travel packages are focused on different needs (e.g. accommodation, catering, transport, etc.). Tour operator costs were estimated by practicing professionals. Total spending and cost elements were estimated from the costs paid to travel agencies.

## G. Multiplicator effects

31. Input-output model (IOM), based on the Leontief method, was used for the analysis (processed data, matrices). Multiplicator effects are calculated for every 5th year. According to experts relations are relatively stable, therefore the data allows to make preliminary estimations for such periods.

32. The gross domestics product share of tourism specific sectors is calculated as follows:

- direct $b = \frac{specific\ sector\ GDP}{Total GDP}$
- accumulated – the average of coefficients of specific sectors multiplied by $b$)

Table 1
**List of tourism characteristic activities**

| *IRTS / TSA RMF tourism characteristic activities* | *ISIC Rev 4*[2] | *NACE Rev 2*[3] | *Description (NACE Rev 2)* |
|---|---|---|---|
| 1. Accommodation for visitors | 5510 | 5510 | Hotels and similar accommodation |
| | | 5520 | Holiday and other short-stay accommodation |
| | 5520 | 5530 | Camping grounds, recreational vehicle parks and trailer parks |
| | 5590 | 5590 | Other accommodation[4] |
| | 6810 | 6810 | Buying and selling of own real estate |
| | | 6820 | Renting and operating of own or leased real estate |
| | 6820 | 6831 | Real estate agencies |
| | | 6832 | Management of real estate on a fee or contract basis |
| 2. Food and beverage serving activities | 5610 | 5610 | Restaurants and mobile food service activities |
| | 5629 | 5629 | Other food service activities |
| | 5630 | 5630 | Beverage serving activities |
| 3. Railway passenger transport | 4911 | 4910 | Passenger rail transport, interurban |
| 4. Road passenger transport | 4922 | 4932 | Taxi operation |
| | | 4939 | Other passenger land transport n.e.c. |
| 5. Water passenger transport | 5011 | 5010 | Sea and coastal passenger water transport |
| | 5021 | 5030 | Inland passenger water transport |
| 6. Air passenger transport | 5110 | 5110 | Passenger air transport |
| 7. Transport equipment rental | 7710 | 7711 | Renting and leasing of cars and light motor vehicles |
| | | 7712 | Renting and leasing of trucks |
| 8. Travel agencies and other reservation services activities | 7911 | 7911 | Travel agency activities |
| | 7912 | 7912 | Tour operator activities |
| | 7990 | 7990 | Other reservation service and related activities |

[2] Source: IRTS 2008 – Draft Compilation Guide (November 2010) – unpublished, Annex 3, p. 130.

[3] Source: conversion table ISIC Rev 4 – NACE Rev 2
(http://unstats.un.org/unsd/cr/registry/regso.asp?Cl=70)

[4] Note that NACE 559 is out of scope for accommodation statistics in Regulation 692/2011. This class includes student residences, school dormitories, workers hostels, railway sleeping cars.

| *IRTS / TSA RMF tourism characteristic activities* | *ISIC Rev 4*[b] | *NACE Rev 2*[c] | *Description (NACE Rev 2)* |
|---|---|---|---|
| 9. Cultural activities | 9000 | 9001 | Performing arts |
| | | 9002 | Support activities to performing arts |
| | | 9003 | Artistic creation |
| | | 9004 | Operation of arts facilities |
| | 9102 | 9102 | Museums activities |
| | | 9103 | Operation of historical sites and buildings and similar visitor attractions |
| | 9103 | 9104 | Botanical and zoological gardens and nature reserves activities |
| 10. Sports and recreational activities | 7721 | 7721 | Renting and leasing of recreational and sports goods |
| | 9200 | 9200 | Gambling and betting activities |
| | 9311 | 9311 | Operation of sports facilities |
| | | 9313 | Fitness facilities |
| | 9321 | 9321 | Activities of amusement parks and theme parks |
| | 9329 | 9329 | Other amusement and recreation activities |
| 11. Retail trade of country-specific tourism characteristic goods | - | | |